Subject: Indianapolis MPO and Evansville MPO Air Quality Conformity Determination – FHWA/FTA Approval Letters

Joint letters from the Federal Highway Administration and Federal Transit Administration approving the formal air quality conformity determinations of the Indianapolis and Evansville MPOs will be included in Appendix K of the FEIS if received at the time of printing. Relative to incorporation of the Preferred Alternative 3C for I-69 into the Long Range Transportation Plan and Short Range Transportation Improvement Program, the Indianapolis MPO made an air quality conformity determination on June 30, 2003, that was being reviewed by the Indiana Department of Environmental Management, FHWA and FTA for approval. Although Alternative 3C for I-69 does not physically terminate in Vanderburgh County, the Evansville MPO will be incorporating the traffic generated by I-69 into their Long Range Transportation Plan that is presently being updated. The updated Long Range Plan is to be adopted by the end of the year 2003, along with an air quality conformity determination. If the letters do not appear in the FEIS, they will be available prior to the Record of Decision.

Technical Memorandum

TO: Scott Deloney, IDEM
Pat Morris, EPA
Joyce Newland, FHWA
Sweson Yang, Indy DMD
Dan Buck, INDOT
Dave Ripple, BLA
Janice Osadzcuk, INDOT
Steve Smith, INDOT
Steve Cunningham, Indy DMD

FROM: Vince Bernardin, BLA

DATE: Revised September 26, 2003

RE: Differences between the air quality analyses conducted in November 2002, the I-69 DEIS, and June 2003

Background

In early 2002, Bernardin, Lochmueller & Associates (BLA) – serving in its capacity as the consultant to INDOT for the preparation of the I-69 Evansville to Indianapolis Tier 1 Draft Environmental Impact Statement (DEIS) – contacted the Indianapolis MPO for assistance in conducting an air quality analysis of the twelve I-69 corridor alternatives under consideration. The objective of the DEIS's analysis was to determine if any of the alternatives might reasonably be expected to push Marion County's emissions above the State Implementation Plan's (SIP) allowed ceilings (i.e., budgets) for VOC, CO, and/or NO_x by the forecast year of 2025. Since there were so many alternatives being analyzed in the DEIS, BLA conceived a short-hand method for conducting this analysis that was *based on* a travel demand model run of one of the I-69 alternatives using the Indianapolis MPO's travel demand model in existence at that time. From this model run, estimates of emissions would be computed for the tested alternative. Subsequently, emissions estimates for the other eleven alternatives would be made using the tested alternative as a benchmark and adjusting emissions based on the differences in forecasted Marion County vehicle-miles of travel (VMT) by functional class.

The alternative that BLA requested the Indianapolis MPO to model was Alternative 3B. The rationale for requesting "3B" was that, according the Indiana Statewide Travel Demand Model (ISTDM), this alternative would produce the largest amount of vehicle-miles of travel (VMT) in Marion County in 2025. Accordingly, BLA reasoned that 3B was probably "the worst case" in terms of emissions production.

In a November 6, 2002 letter from the Indianapolis MPO commenting on the DEIS (that was published in July 2002), the following statement was made: "… analysis conducted by the MPO at the request of Bernardin, Lochmueller & Associates of a worst case scenario that utilizes SR 37 to I-465 shows NO_x emissions would be exceeded in the 2025 time period." Since this letter was a formal comment on the DEIS, it is a matter of

public record and its conclusions have been quoted by the Hoosier Environmental Council.

This statement by the MPO was in apparent conflict with the conclusion of the DEIS with respect to Marion County air quality, which stated: "Because all alternatives fall under the SIP emissions budget when added to the Indianapolis Long-Range Transportation Plan, the addition of any alternative to the Long-Range Plan would not jeopardize conformity to the SIP."

Subsequently, on June 30, 2003, the Indianapolis MPO published a document entitled *Air Quality Conformity Analysis: 2004-2006 Indianapolis Regional Transportation Improvement Program and 2025 Indianapolis Regional Transportation Plan*. The analysis described in the *Air Quality Conformity Analysis* included Alternative 3C (as opposed to "the worst case" 3B), since 3C had been selected by Governor O'Bannon in January 2003 as the State's "preferred alternative". [In reality, this is a very fine distinction, because 3B and 3C are very similar in terms of their alignments and overall transportation performance.] The conclusion of the MPO's *Air Quality Analysis* states: "… none of the emissions in the (SIP) budget is exceeded… for any of these time periods. Therefore, the 2025 Plan… can proceed as proposed."

In order to explain these apparent contradictions, this memorandum will identify the variables/conditions that were different between…

- the MPO's November 2002 statement and the DEIS's conclusion, and
- the MPO's November 2002 statement and its June 2003 air quality conformity analysis

This explanation of differences will follow from a discussion of the methodological steps undertaken by each analysis.

* * *

Differences between the November 2002 Statement and the DEIS

This section will document the methodologies and other relevant background factors used by both: (1) the Indianapolis MPO that led to its November 2002 statement questioning the conformity of a corridor for I-69 that would make use of SR 37, and; (2) the DEIS analysis that led to the conclusion that none of the I-69 corridors would jeopardize air quality conformity in Marion County.

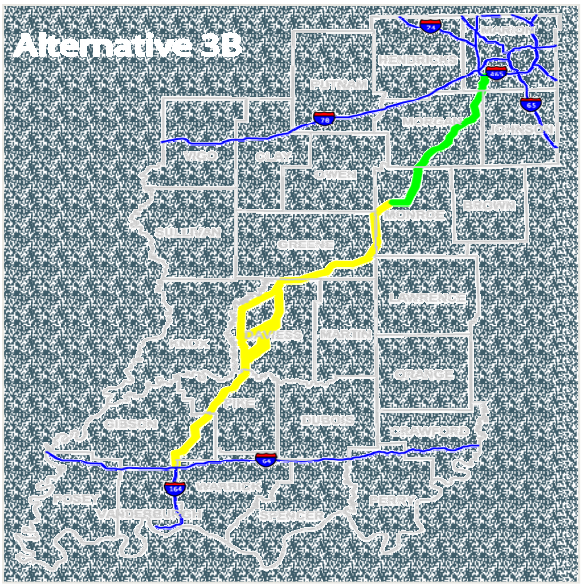
To conduct the analysis in the DEIS, Bernardin, Lochmueller & Associates, Inc. (BLA) conducted the following step-by-step analysis:

1) BLA began by selecting the probable "worst case" I-69 alternative in terms of generating mobile source emissions in Marion County. That alternative was identified as "3B" because it would produce the overall greatest increase in vehicle-miles of travel (VMT) in Marion County according to the Indiana

Statewide Travel Demand Model (ISTDM). The ISTDM was used for purposes of modeling all I-69 alternatives.

2) BLA requested that the MPO provide them with their model's network of the Indianapolis Long-Range Plan to which BLA coded improvements to the SR 37 corridor that would represent I-69. This revised network was returned to the MPO with the request that the MPO run a scenario of the Long-Range Plan with I-69 added for the year 2025. BLA provided additional instructions to the MPO with respect to changes in the model's external station loadings that would result from diversion of traffic from other roads to the I-69 corridor. The external station loading changes were based on data from the ISTDM model runs of Alternative "3B".

Worst Case Alternative "3B"



3) Per BLA's specifications as described in 2) above, the Indianapolis MPO ran the requested model run using its TRANPLAN model. Subsequently, the MPO post-processed the model results using their standard air quality analysis procedures. These procedures utilize the EMIS program and MOBILE 5a emission rates. The EMIS program is a link-based post-processor. *It was on the basis of this analysis that the MPO concluded that the NO_x emissions budget would be exceeded by 2025.*

4) Per standard EPA requirements, BLA then benchmarked the Indianapolis MPO's model output to functional class percentage control totals derived from the Highway Performance Monitoring System (HPMS).

5) Based on the analysis conducted above BLA derived emission rates per vehicle-mile by roadway functional classification for VOC, CO, and NO_x. BLA then

applied EPA's "MOBILE 5 Information Sheet #8" factors to estimate the effects to emission rates had MOBILE 6 rates been used in the MPO's analysis. The justification for applying these "Sheet #8 adjustments" was based on the recognition that EPA is recommending the use of MOBILE 6 emission rates for all new air quality analysis and that these rates will, in fact, be required in the near future.

6) Using these Sheet 8-adjusted emission rates and VMT totals by functional class generated by the ISTDM, BLA computed emissions for each alternative. *It was on the basis of this analysis that BLA concluded in the DEIS that there would be no SIP budget violation regardless of which I-69 alternative was eventually selected.*

Conclusion: The major factor contributing to the difference between the MPO's November 2002 statement and the conclusion of the DEIS was the HPMS benchmarking and the application of Sheet 8 adjustment factors by BLA to the MOBILE 5a emission rates.

* * *

Differences between the November 2002 and the June 2003 Air Quality Analysis

The basic methodology employed by the MPO in its recent June 2003 air quality conformity analysis follows their standard method of: (1) modeling transportation networks with planned improvements coded into the networks; (2) running the EMIS post-processor using MOBILE 5a emission rates, and; (3) benchmarking the resulting emissions using the approved HPMS adjustment factors.[1]

Note that this process does not include "Sheet #8 adjustments". It is my understanding that the reason why the MPO has elected not to use MOBILE 6 emission rates or apply "Sheet #8 adjustments" is based on the fact that the current SIP budgets are based on MOBILE 5 rates. In any case, the differences between the November 2002 and June 2003 analyses were primarily not methodological. Rather, they are the result of several non-methodological factors that are identified and discussed below…

- **The MPO's travel demand model was expanded, updated and re-validated between November 2002 and June 2003.** Travel demand models are routinely updated. For most metro areas, these updates are typically undertaken about once every ten years when new Census data become available. Prior to the recent model update, the last model was developed (incidentally, by BLA under contract to The Corradino Group) in 1993 based on 1990 Census land use data and 1990 CTPP data. In the recent model update, the entirety of all eight "ring counties" surrounding Marion County were added to the geographic scope of the model. Previously, only small portions of the surrounding counties were included in the urbanized area model. This model update/expansion was undertaken with the support of IDEM, INDOT and FHWA and was financed using CMAQ funds to

[1] This analysis was a formal conformity analysis that generated emissions estimates not only for 2025, but also for several intermediate years: 2006, 2015, and 2020.

prepare for the new 8-hour air quality standards that will go into effect in early 2004.

The degree to which this model update/expansion/validation has influenced the results of the air quality analysis has been investigated. The MPO has provided the comparative statistics shown in the following table.

Old Model and New Model: Vehicle-Miles of Traffic (VMT) and Average Speeds for Marion County in the Year 2025

	VMT in Marion County	Average Speed
Old Model Including I-69	37,285,852	31.67
New Model Excluding I-69	32,990,208	36.38
New Model Including I-69	33,301,014	36.41

As the table indicates, the effect of the model is to reduce VMT in Marion County by about 10%. In comparing the old model output for a 2025 scenario that included I-69 with the same scenario using the new model, there is a reduction of over 3,980,000 VMT with an overall average speed improvement of about 4.7 miles-per-hour. Clearly, this significant reduction in VMT generated by the new model would be expected to produce a substantial reduction in emissions for all three pollutants. This, in fact, is exactly what happened.

In our judgment, the results of the new, expanded model should be trusted to be more reliable than the earlier model, simply because the model's new base year (2000) is tied to the "ground truth" of the recent U.S. Census. (In modeling terms, the geographic allocation of households, population, employment, etc. at the level of traffic analysis zones comes from the recent Census and other updated data sources.) Accordingly, land use forecasts to the year 2025 (as well as intermediate years) are not as far a "look" into the future as forecasts out to the same year(s) from a 1990 base year.

Methodologically, the external stations for the new model are now "farther out" than their original locations. This means that the external station data supplied by BLA to the MPO was for different locations than the previous analysis. Notwithstanding this difference, there is no theoretical reason to believe that the expansion of the study areas would have harmed the results of the modeling/air quality analysis.

On the contrary, the new model is almost certainly superior to the old, because it is based on updated 2000 data sources and was re-calibrated to 2000 traffic counts throughout the expanded region. For these reasons, it was appropriate to use the new model for the June 2003 air quality analysis. Moreover, it should be pointed out that this was the earliest practical date for the MPO to use the model, since it was not developed at the time of the 2002 analysis.

- **The June 2003 conformity analysis included additional projects requested by INDOT in the Long-Range Plan.** The most notable of these was the addition of

travel lanes on I-465 from: (a) I-70 to SR 67 in the 2007-2015 time frame, and; (b) from SR 67 to I-65 South in the 2015-2020 time frame. These improvements will increase the capacity of I-465 to 10 lanes along these sections of the highway. This addition had the effect of reducing congestion and improving traffic flow on I-465 in the latter part of the analysis period. On the whole, this would have had beneficial air quality impacts.

- **Unlike the earlier analysis, the June 2003 conformity analysis included in its travel demand model run additional land development over-and-beyond the MPO's forecasts.** This additional land use was provided by BLA to the MPO to represent an estimate of indirect land use impacts that would be "induced" by I-69 (i.e., land use that would not occur if the highway is not built). These estimates were developed as part of the documented DEIS analytical process. The effect of this change was to increase the total number of trips included in the model runs. Accordingly, its effect was to increase mobile source emissions marginally.

- **In the Fall of 2002, the I-69 Study Team (comprised of representatives from INDOT, FHWA, and BLA) made an alignment change to *all* the I-69 alternatives that make use of SR 37.** This particular alignment change was to keep the alignment on existing SR 37 virtually all the way to its northern terminus at I-465. Before this change, the "SR 37 alternatives" actually diverged from SR 37 in Morgan County and proceeded on a northerly course across the White River near SR 144 and loosely followed the Mann Road corridor north to the existing Mann Road interchange at I-465.

  From a traffic perspective, the effect of this change was to keep more VMT on I-69 rather than splitting it between a new Interstate corridor and existing SR 37. This had the effect of marginally reducing total VMT while providing the operational benefits of an Interstate facility to more traffic (i.e., fewer stops and starts and less intersection-related delay). The net effect of this alignment shift was beneficial from an air quality standpoint.

- **In the new analysis, the "worst case" was not used.** In January 2003, Governor O'Bannon selected Alternative "3C" as the State's preferred corridor for I-69. The MPO's November 2002 comment suggesting a possible SIP violation was based on a model run of the "worst case". The "worst case" – defined as the alternative that would put the largest additional amount of VMT in Marion County – was "3B", as opposed to the corridor that was eventually selected: "3C". This means that aside from the difference in locations of the external stations from the earlier model, there were slight differences in the external data provided by BLA to the MPO due to the slight differences between "3B" and "3C". In terms of their effect on the air quality analysis, the difference is very minor, because the difference between the two alternatives in terms of Marion County VMT is very marginal and their alignments in Marion County are identical.

"3C" – The Preferred Corridor

Conclusion

The combination of these five factors explains the difference in results and conclusions between the MPO's 2002 and 2003 analyses. In my judgment, the most important of these factors are: (1) the updated 2000 travel demand model, and; (2) the additional capacity on I-465. It should be noted that both analyses made use of MOBILE 5a emission rates, which are the standard upon which the current SIP budgets are based. The June 2003 analysis puts forecasted emissions levels for all the analyzed time frames well below the SIP budgets for all three pollutants without the benefit of MOBILE 6 rates.

Despite the apparent conflict between the MPO's November 2002 comment letter and its June 2003 analysis, the latter analysis is clearly the more definitive word on the subject because it reflects more credible travel demand model results (due to its recent update and re-calibration) and the presence of new, updated highway capacity improvements in addition to I-69.

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Appendix K- Table 1: Marion County Air Quality Analysis (revised for SR 37 alignments changes -- 2C, 3B, 3C, 4C and 5B)

Marion County
Statewide Model VMT by Functional Class

	1998 Base	2025 E+C	Alt 1		Alt 2a		Alt 2b		Alt 2c		Alt 3a		Alt 3b		Alt 3c		Alt 4a		Alt 4b		Alt 4c		Alt 5a		Alt 5b	
				Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C
1 R Interstate	0	0	1.0000	0	1.0000	0	1.0000	0	1.0000	448,997	1.0000	0	1.0000	421,227	1.0000	427,584	1.0000	0	1.0000	0	1.0000	447,982	1.0000	0	1.0000	418,455
2 R Prin Arterial	0	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0
6 R Minor Arterial	11,277	33,992	1.0115	34,382	1.0038	34,122	0.9708	33,000	0.5064	17,214	0.9810	33,346	0.5174	17,587	0.5123	17,413	0.9984	33,936	0.9657	32,826	0.5095	17,318	0.9213	31,318	0.5163	17,550
7 R Major Collector	0	16,632	0.9865	16,408	1.0069	16,747	1.0044	16,706	0.9699	16,132	1.0165	16,906	1.0011	16,651	0.9766	16,242	0.9895	16,457	0.9559	15,899	1.0075	16,757	0.9898	16,462	0.9720	16,166
8 R Minor Collector	626	1,270	1.0118	1,285	1.0079	1,280	0.9906	1,258	0.9866	1,253	0.9890	1,256	0.9874	1,254	0.9866	1,253	1.0071	1,279	0.9921	1,260	0.9906	1,258	0.9835	1,249	0.9843	1,250
9 R Local	0	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0
11 U Interstate	10,166,695	13,005,814	1.0008	13,016,487	1.0030	13,044,541	1.0080	13,109,720	1.0047	13,067,288	1.0107	13,145,498	1.0071	13,098,093	1.0090	13,122,917	1.0040	13,058,294	1.0076	13,105,294	1.0050	13,070,603	1.0159	13,213,080	1.0084	13,114,767
12 U Free/Expways	384,243	377,886	0.9979	377,110	0.9945	375,806	0.9735	367,889	0.7281	275,133	0.9641	364,302	0.7307	276,135	0.7309	276,210	0.9993	377,608	0.9717	367,197	0.7248	273,885	0.9309	351,767	0.7289	275,448
14 U Prin Arterial	4,148,975	4,189,298	0.9986	4,183,591	0.9974	4,178,296	0.9965	4,174,692	0.9849	4,126,046	0.9940	4,164,048	0.9885	4,141,239	0.9844	4,124,145	0.9977	4,179,587	0.9968	4,175,930	0.9844	4,123,804	0.9836	4,120,582	0.9839	4,122,051
16 U Minor Arterial	1,731,557	2,080,192	0.9993	2,078,825	1.0010	2,082,285	0.9981	2,076,266	0.9891	2,057,493	1.0006	2,081,405	0.9905	2,060,467	0.9908	2,061,061	1.0009	2,082,045	0.9970	2,073,961	0.9901	2,059,585	0.9910	2,061,511	0.9897	2,058,804
17 U Collector	132,140	161,942	1.0034	162,496	1.0023	162,309	1.0006	162,036	0.9250	149,795	0.9985	161,699	0.8981	145,434	0.9228	149,436	1.0032	162,468	1.0023	162,317	0.9178	148,628	0.9948	161,104	0.9253	149,850
19 U Local	0	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0
Total	16,575,513	19,867,026	1.0002	19,870,584	1.0014	19,895,386	1.0038	19,941,567	1.0147	20,159,351	1.0051	19,968,460	1.0157	20,178,087	1.0166	20,196,261	1.0022	19,911,674	1.0034	19,934,684	1.0147	20,159,820	1.0045	19,957,073	1.0155	20,174,341

Marion County
Statewide VMT Changes Applied to Indianapolis Region Travel Model VMT for 2025

	HPMS 1998 Base	2025 LRP	Alt 1		Alt 2a		Alt 2b		Alt 2c		Alt 3a		Alt 3b		Alt 3c		Alt 4a		Alt 4b		Alt 4c		Alt 5a		Alt 5b	
1 R Interstate	-	874,024	1.0000	874,024	1.0000	874,024	1.0000	874,024	1.0000	874,024	1.0000	874,024	1.0000	874,024	1.0000	874,024	1.0000	874,024	1.0000	874,024	1.0000	874,024	1.0000	874,024	1.0000	874,024
2 R Prin Arterial	-	500,234	1.0000	500,234	1.0000	500,234	1.0000	500,234	1.0000	500,234	1.0000	500,234	1.0000	500,234	1.0000	500,234	1.0000	500,234	1.0000	500,234	1.0000	500,234	1.0000	500,234	1.0000	500,234
6 R Minor Arterial	-	556,667	1.0007	557,057	1.0002	556,797	0.9982	555,675	0.9699	539,889	0.9988	556,021	0.9705	540,262	0.9702	540,088	0.9999	556,611	0.9979	555,501	0.9700	539,993	0.9952	553,993	0.9705	540,225
7 R Major Collector	-	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0
8 R Minor Collector	-	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0
9 R Local	-	163,263	0.9987	163,054	1.0008	163,388	1.0004	163,325	0.9968	162,746	1.0016	163,523	1.0000	163,266	0.9975	162,856	0.9990	163,097	0.9954	162,520	1.0007	163,376	0.9988	163,072	0.9970	162,777
11 U Interstate	9,978,947	15,398,744	1.0008	15,411,381	1.0030	15,444,596	1.0080	15,521,768	1.0339	15,920,526	1.0107	15,564,128	1.0344	15,929,228	1.0368	15,964,977	1.0040	15,460,880	1.0076	15,516,527	1.0341	15,923,435	1.0159	15,644,145	1.0356	15,946,198
12 U Free/Expways	557,385	728,699	0.9979	727,203	0.9945	724,688	0.9735	709,421	0.7281	530,555	0.9641	702,504	0.7307	532,487	0.7309	532,631	0.9993	728,163	0.9717	708,087	0.7248	528,148	0.9309	678,332	0.7289	531,162
14 U Prin Arterial	5,909,793	8,417,014	0.9986	8,405,548	0.9974	8,394,909	0.9965	8,387,668	0.9849	8,289,930	0.9940	8,366,282	0.9885	8,320,455	0.9844	8,286,111	0.9977	8,397,503	0.9968	8,390,155	0.9844	8,285,425	0.9836	8,278,952	0.9839	8,281,903
16 U Minor Arterial	4,188,939	7,420,161	0.9993	7,415,285	1.0010	7,427,627	0.9981	7,406,157	0.9891	7,339,192	1.0006	7,424,488	0.9905	7,349,801	0.9908	7,351,920	1.0009	7,426,771	0.9970	7,397,935	0.9901	7,346,655	0.9910	7,353,525	0.9897	7,343,869
17 U Collector	1,182,924	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0
19 U Local	3,477,251	2,157,764	1.0003	2,158,318	1.0002	2,158,131	1.0000	2,157,858	0.9944	2,145,617	0.9999	2,157,521	0.9923	2,141,256	0.9942	2,145,258	1.0002	2,158,290	1.0002	2,158,139	0.9938	2,144,450	0.9996	2,156,926	0.9944	2,145,672
Total	25,295,239	36,216,570	0.9999	36,212,103	1.0008	36,244,394	1.0016	36,276,130	1.0024	36,302,712	1.0025	36,308,726	1.0037	36,351,013	1.0039	36,358,098	1.0014	36,265,572	1.0013	36,263,122	1.0025	36,305,741	0.9996	36,203,203	1.0030	36,326,064

Marion County
VOC Emissions

	2025 LRP Emissions Factor (g/mi)	2025 LRP Emission (tons/day)	Alt 1 Emission (tons/day)	Alt 2a Emission (tons/day)	Alt 2b Emission (tons/day)	Alt 2c Emission (tons/day)	Alt 3a Emission (tons/day)	Alt 3b Emission (tons/day)	Alt 3c Emission (tons/day)	Alt 4a Emission (tons/day)	Alt 4b Emission (tons/day)	Alt 4c Emission (tons/day)	Alt 5a Emission (tons/day)	Alt 5b Emission (tons/day)
1 R Interstate	0.514	0.495	0.495	0.495	0.495	0.495	**0.495**	0.495	0.495	0.495	0.495	0.495	0.495	0.495
2 R Prin Arterial	1.290	0.712	0.712	0.712	0.712	0.712	**0.712**	0.712	0.712	0.712	0.712	0.712	0.712	0.712
6 R Minor Arterial	1.286	0.789	0.790	0.790	0.788	0.766	**0.788**	0.766	0.766	0.789	0.788	0.766	0.786	0.766
7 R Major Collector	0.000	0.000	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8 R Minor Collector	0.000	0.000	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9 R Local	2.120	0.382	0.381	0.382	0.382	0.380	**0.382**	0.382	0.381	0.381	0.380	0.382	0.381	0.380
11 U Interstate	1.151	19.540	19.556	19.598	19.696	20.202	**19.750**	20.213	20.258	19.619	19.689	20.206	19.851	20.235
12 U Free/Expways	1.567	1.258	1.256	1.251	1.225	0.916	**1.213**	0.919	0.920	1.257	1.223	0.912	1.171	0.917
14 U Prin Arterial	1.405	13.036	13.018	13.002	12.991	12.839	**12.957**	12.886	12.833	13.006	12.994	12.832	12.822	12.827
16 U Minor Arterial	1.419	11.605	11.597	11.616	11.583	11.478	**11.612**	11.495	11.498	11.615	11.570	11.490	11.501	11.485
17 U Collector	0.000	0.000	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19 U Local	2.601	6.186	6.187	6.187	6.186	6.151	**6.185**	6.139	6.150	6.187	6.187	6.148	6.184	6.151
Unadjusted Total		54.002	53.992	54.033	54.057	53.939	**54.094**	54.007	54.013	54.061	54.038	53.942	53.902	53.968
HPMS Adjusted Total		60.555	60.543	60.589	60.616	60.484	**60.658**	60.560	60.566	60.621	60.594	60.487	60.443	60.517
Budget		71.70	71.70	71.70	71.70	71.70	**71.70**	71.70	71.70	71.70	71.70	71.70	71.70	71.70
Emissions/Budget		0.845	0.844	0.845	0.845	0.844	**0.846**	0.845	0.845	0.845	0.845	0.844	0.843	0.844

Marion County
CO Emissions

	2025 LRP Emissions Factor (g/mi)	2025 LRP Emission (tons/day)	Alt 1 Emission (tons/day)	Alt 2a Emission (tons/day)	Alt 2b Emission (tons/day)	Alt 2c Emission (tons/day)	Alt 3a Emission (tons/day)	Alt 3b Emission (tons/day)	Alt 3c Emission (tons/day)	Alt 4a Emission (tons/day)	Alt 4b Emission (tons/day)	Alt 4c Emission (tons/day)	Alt 5a Emission (tons/day)	Alt 5b Emission (tons/day)
1 R Interstate	5.525	5.323	5.323	5.323	5.323	5.323	**5.323**	5.323	5.323	5.323	5.323	5.323	5.323	5.323
2 R Prin Arterial	9.663	5.329	5.329	5.329	5.329	5.329	**5.329**	5.329	5.329	5.329	5.329	5.329	5.329	5.329
6 R Minor Arterial	9.595	5.887	5.892	5.889	5.877	5.710	**5.881**	5.714	5.712	5.887	5.875	5.711	5.859	5.713
7 R Major Collector	0.000	0.000	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8 R Minor Collector	0.000	0.000	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9 R Local	20.488	3.687	3.682	3.690	3.689	3.676	**3.693**	3.687	3.678	3.683	3.670	3.690	3.683	3.676
11 U Interstate	8.455	143.507	143.625	143.935	144.654	148.370	**145.049**	148.451	148.784	144.086	144.605	148.397	145.794	148.609
12 U Free/Expways	13.041	10.475	10.454	10.417	10.198	7.627	**10.099**	7.655	7.657	10.467	10.179	7.592	9.751	7.636
14 U Prin Arterial	11.088	102.880	102.740	102.610	102.521	101.327	**102.260**	101.700	101.280	102.641	102.552	101.271	101.192	101.228
16 U Minor Arterial	11.257	92.074	92.014	92.167	91.900	91.069	**92.128**	91.201	91.227	92.156	91.798	91.162	91.247	91.127
17 U Collector	0.000	0.000	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19 U Local	24.346	57.906	57.921	57.916	57.909	57.580	**57.900**	57.463	57.570	57.920	57.916	57.549	57.884	57.582
Unadjusted Total		427.069	426.978	427.275	427.399	426.010	**427.659**	426.522	426.560	427.493	427.247	426.024	426.062	426.223
HPMS Adjusted Total		473.876	473.776	474.105	474.243	472.701	**474.532**	473.270	473.312	474.347	474.074	472.717	472.759	472.938
Budget		521.60	521.60	521.60	521.60	521.60	**521.60**	521.60	521.60	521.60	521.60	521.60	521.60	521.60
Emissions/Budget		0.909	0.908	0.909	0.909	0.906	**0.910**	0.907	0.907	0.909	0.909	0.906	0.906	0.907

Marion County
NOX Emissions

	2025 LRP Emissions Factor (g/mi)	2025 LRP Emission (tons/day)	Alt 1 Emission (tons/day)	Alt 2a Emission (tons/day)	Alt 2b Emission (tons/day)	Alt 2c Emission (tons/day)	Alt 3a Emission (tons/day)	Alt 3b Emission (tons/day)	Alt 3c Emission (tons/day)	Alt 4a Emission (tons/day)	Alt 4b Emission (tons/day)	Alt 4c Emission (tons/day)	Alt 5a Emission (tons/day)	Alt 5b Emission (tons/day)
1 R Interstate	0.866	0.834	0.834	0.834	0.834	0.834	0.834	0.834	**0.834**	0.834	0.834	0.834	0.834	0.834
2 R Prin Arterial	1.365	0.753	0.753	0.753	0.753	0.753	0.753	0.753	**0.753**	0.753	0.753	0.753	0.753	0.753
6 R Minor Arterial	1.366	0.838	0.839	0.838	0.837	0.813	0.837	0.813	**0.813**	0.838	0.836	0.813	0.834	0.813
7 R Major Collector	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.000	0.000	0.000
8 R Minor Collector	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.000	0.000	0.000
9 R Local	1.335	0.240	0.240	0.240	0.240	0.239	0.241	0.240	**0.240**	0.240	0.239	0.240	0.240	0.240
11 U Interstate	1.605	27.250	27.272	27.331	27.468	28.173	27.543	28.189	**28.252**	27.360	27.458	28.178	27.684	28.219
12 U Free/Expways	1.355	1.088	1.086	1.082	1.059	0.792	1.049	0.795	**0.795**	1.087	1.057	0.789	1.013	0.793
14 U Prin Arterial	1.348	12.510	12.493	12.477	12.466	12.321	12.435	12.367	**12.316**	12.481	12.470	12.315	12.305	12.309
16 U Minor Arterial	1.343	10.984	10.977	10.995	10.963	10.864	10.990	10.880	**10.883**	10.994	10.951	10.875	10.885	10.871
17 U Collector	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.000	0.000	0.000
19 U Local	1.424	3.387	3.388	3.388	3.387	3.368	3.387	3.361	**3.368**	3.388	3.388	3.366	3.386	3.368
Unadjusted Total		57.884	57.881	57.939	58.008	58.158	58.068	58.232	**58.253**	57.975	57.987	58.163	57.934	58.200
HPMS Adjusted Total		44.895	44.893	44.937	44.991	45.107	45.037	45.164	**45.181**	44.965	44.974	45.111	44.933	45.140
Budget		63.10	63.10	63.10	63.10	63.10	63.10	63.10	**63.10**	63.10	63.10	63.10	63.10	63.10
Emissions/Budget		0.711	0.711	0.712	0.713	0.715	0.714	0.716	**0.716**	0.713	0.713	0.715	0.712	0.715

Appendix K- Table 2: Vanderburgh County Air Quality Analysis

Vanderburgh County
Statewide Model VMT by Functional Class

	1998 Base	2025 E+C	Alt 1		Alt 2a		Alt 2b		Alt 2c		Alt 3a		Alt 3b		Alt 3c		Alt 4a		Alt 4b		Alt 4c		Alt 5a		Alt 5b	
			Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C		Change from E+C	
1 R Interstate	280,373	407,538	1.1619	473,501	1.1614	473,332	1.1655	475,002	1.1679	475,947	1.2292	500,957	1.2359	503,680	1.2210	497,599	1.2130	494,362	1.2226	498,245	1.2233	498,535	1.1979	488,203	1.1965	487,614
2 R Prin Arterial	110,337	59,679	1.2527	74,758	1.2556	74,932	1.2621	75,321	1.2744	76,054	0.7668	45,764	0.7677	45,816	0.7755	46,282	0.7481	44,645	0.7524	44,903	0.7560	45,119	0.7910	47,206	0.7921	47,273
6 R Minor Arterial	36,716	70,479	0.9696	68,334	0.9735	68,614	0.9725	68,542	0.9714	68,460	1.0879	76,677	1.0895	76,789	1.0870	76,612	1.0915	76,930	1.0909	76,889	1.0900	76,824	1.0830	76,331	1.0812	76,201
7 R Major Collector	201,747	264,132	1.0071	266,016	1.0104	266,884	1.0105	266,901	1.0115	267,167	1.0124	267,406	1.0151	268,126	1.0119	267,265	1.0125	267,444	1.0135	267,704	1.0126	267,466	1.0128	267,512	1.0124	267,398
8 R Minor Collector	3,949	5,616	0.9696	5,445	0.9875	5,546	0.9911	5,566	0.9929	5,576	1.0381	5,830	1.0377	5,828	1.0365	5,821	1.0328	5,800	1.0335	5,804	1.0333	5,803	1.0313	5,792	1.0306	5,788
9 R Local	0	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0
11 U Interstate	133,530	220,394	1.1351	250,163	1.1382	250,857	1.1421	251,702	1.1447	252,289	1.2757	281,161	1.2786	281,791	1.2698	279,864	1.2701	279,919	1.2717	280,281	1.2732	280,598	1.2565	276,933	1.2557	276,751
12 U Free/Expways	299,602	712,031	1.0200	726,264	1.0221	727,779	1.0239	729,066	1.0248	729,670	0.9889	704,139	0.9895	704,522	0.9894	704,519	0.9862	702,201	0.9870	702,793	0.9871	702,822	0.9897	704,717	0.9892	704,359
14 U Prin Arterial	910,753	441,424	1.0184	449,562	1.0206	450,537	1.0220	451,154	1.0226	451,392	0.9916	437,737	0.9920	437,907	0.9917	437,741	0.9900	437,030	0.9895	436,792	0.9899	436,954	0.9917	437,746	0.9915	437,655
16 U Minor Arterial	6,884	31,530	1.0008	31,555	1.0119	31,906	1.0005	31,547	1.0075	31,766	0.9928	31,303	0.9835	31,011	0.9932	31,316	0.9938	31,333	0.9899	31,211	0.9935	31,324	0.9893	31,194	0.9957	31,395
17 U Collector	50,406	36,138	1.0051	36,324	1.0065	36,372	1.0068	36,384	1.0071	36,395	1.0140	36,644	1.0151	36,684	1.0130	36,608	1.0092	36,471	1.0093	36,473	1.0094	36,478	1.0104	36,513	1.0098	36,493
19 U Local	0	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0	1.0000	0
Total	**2,034,297**	**2,248,961**	1.0591	**2,381,922**	1.0613	**2,386,759**	1.0632	**2,391,185**	1.0648	**2,394,716**	1.0617	**2,387,618**	1.0637	**2,392,154**	1.0599	**2,383,627**	1.0565	**2,376,135**	1.0588	**2,381,095**	1.0591	**2,381,923**	1.0548	**2,372,147**	1.0542	**2,370,927**

Vanderburgh County
HPMS VMT Adjusted by EUTS Model Growth Rates for 2025

	1998 Base	2025 LRP	Alt 1		Alt 2a		Alt 2b		Alt 2c		Alt 3a		Alt 3b		Alt 3c		Alt 4a		Alt 4b		Alt 4c		Alt 5a		Alt 5b	
1 R Interstate	272,665	397,168	1.1619	461,453	1.1614	461,288	1.1655	462,915	1.1679	463,836	1.2292	488,210	1.2359	490,864	1.2210	484,937	1.2130	481,783	1.2226	485,567	1.2233	485,850	1.1979	475,780	1.1965	475,206
2 R Prin Arterial	128,016	136,311	1.2527	170,752	1.2556	171,150	1.2621	172,038	1.2744	173,713	0.7668	104,528	0.7677	104,647	0.7755	105,711	0.7481	101,972	0.7524	102,562	0.7560	103,055	0.7910	107,822	0.7921	107,975
6 R Minor Arterial	52,215	104,293	0.9696	101,119	0.9735	101,533	0.9725	101,427	0.9714	101,305	1.0879	113,465	1.0895	113,630	1.0870	113,368	1.0915	113,839	1.0909	113,778	1.0900	113,682	1.0830	112,953	1.0812	112,760
7 R Major Collector	292,919	282,159	1.0071	284,172	1.0104	285,099	1.0105	285,117	1.0115	285,401	1.0124	285,656	1.0151	286,426	1.0119	285,506	1.0125	285,697	1.0135	285,975	1.0126	285,721	1.0128	285,770	1.0124	285,648
8 R Minor Collector	29,421	18,560	0.9696	17,995	0.9875	18,329	0.9911	18,395	0.9929	18,428	1.0381	19,267	1.0377	19,261	1.0365	19,237	1.0328	19,168	1.0335	19,181	1.0333	19,178	1.0313	19,142	1.0306	19,128
9 R Local	41,290	39,092	1.0000	39,092	1.0000	39,092	1.0000	39,092	1.0000	39,092	1.0000	39,092	1.0000	39,092	1.0000	39,092	1.0000	39,092	1.0000	39,092	1.0000	39,092	1.0000	39,092	1.0000	39,092
11 U Interstate	193,897	331,393	1.1351	376,155	1.1382	377,198	1.1421	378,469	1.1447	379,352	1.2757	422,765	1.2786	423,712	1.2698	420,814	1.2701	420,897	1.2717	421,441	1.2732	421,918	1.2565	416,407	1.2557	416,134
12 U Free/Expways	376,998	1,048,084	1.0200	1,069,034	1.0221	1,071,264	1.0239	1,073,159	1.0248	1,074,048	0.9889	1,036,467	0.9895	1,037,031	0.9894	1,037,026	0.9862	1,033,614	0.9870	1,034,486	0.9871	1,034,529	0.9897	1,037,318	0.9892	1,036,791
14 U Prin Arterial	1,146,026	649,760	1.0184	661,739	1.0206	663,174	1.0220	664,082	1.0226	664,433	0.9916	644,333	0.9920	644,583	0.9917	644,339	0.9900	643,292	0.9895	642,942	0.9899	643,180	0.9917	644,346	0.9915	644,212
16 U Minor Arterial	981,597	1,221,455	1.0008	1,222,423	1.0119	1,236,021	1.0005	1,222,114	1.0075	1,230,598	0.9928	1,212,661	0.9835	1,201,349	0.9932	1,213,165	0.9938	1,213,823	0.9899	1,209,097	0.9935	1,213,475	0.9893	1,208,439	0.9957	1,216,225
17 U Collector	337,570	381,118	1.0051	383,080	1.0065	383,586	1.0068	383,712	1.0071	383,828	1.0140	386,454	1.0151	386,876	1.0130	386,075	1.0092	384,630	1.0093	384,651	1.0094	384,704	1.0104	385,073	1.0098	384,862
19 U Local	407,968	416,304	1.0000	416,304	1.0000	416,304	1.0000	416,304	1.0000	416,304	1.0000	416,304	1.0000	416,304	1.0000	416,304	1.0000	416,304	1.0000	416,304	1.0000	416,304	1.0000	416,304	1.0000	416,304
Total	**4,260,582**	**5,025,697**	1.0353	**5,203,318**	1.0395	**5,224,038**	1.0380	**5,216,824**	1.0407	**5,230,337**	1.0286	**5,169,203**	1.0275	**5,163,775**	1.0278	**5,165,576**	1.0256	**5,154,112**	1.0257	**5,155,076**	1.0269	**5,160,687**	1.0244	**5,148,445**	1.0256	**5,154,338**

Vanderburgh County
VOC Emissions

	2025 LRP Emissions Factor (g/mi)	2025 LRP Emission (tons/day)	Alt 1 Emission (tons/day)	Alt 2a Emission (tons/day)	Alt 2b Emission (tons/day)	**Alt 2c Emission (tons/day)**	Alt 3a Emission (tons/day)	Alt 3b Emission (tons/day)	Alt 3c Emission (tons/day)	Alt 4a Emission (tons/day)	Alt 4b Emission (tons/day)	Alt 4c Emission (tons/day)	Alt 5a Emission (tons/day)	Alt 5b Emission (tons/day)
1 R Interstate		0.000	0.000	0.000	0.000	**0.000**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2 R Prin Arterial	1.115	0.168	0.210	0.210	0.211	**0.214**	0.128	0.129	0.130	0.125	0.126	0.127	0.133	0.133
6 R Minor Arterial	1.178	0.135	0.131	0.132	0.132	**0.132**	0.147	0.148	0.147	0.148	0.148	0.148	0.147	0.146
7 R Major Collector	1.208	0.376	0.378	0.380	0.380	**0.380**	0.380	0.381	0.380	0.380	0.381	0.381	0.381	0.380
8 R Minor Collector	1.273	0.026	0.025	0.026	0.026	**0.026**	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027
9 R Local	1.398	0.060	0.060	0.060	0.060	**0.060**	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060
11 U Interstate	1.106	0.404	0.459	0.460	0.461	**0.463**	0.515	0.517	0.513	0.513	0.514	0.514	0.508	0.507
12 U Free/Expways	1.237	1.429	1.458	1.461	1.463	**1.465**	1.413	1.414	1.414	1.410	1.411	1.411	1.415	1.414
14 U Prin Arterial	1.237	0.886	0.902	0.904	0.906	**0.906**	0.879	0.879	0.879	0.877	0.877	0.877	0.879	0.879
16 U Minor Arterial	1.410	1.899	1.900	1.921	1.900	**1.913**	1.885	1.867	1.886	1.887	1.879	1.886	1.878	1.890
17 U Collector	1.525	0.641	0.644	0.645	0.645	**0.645**	0.650	0.650	0.649	0.647	0.647	0.647	0.647	0.647
19 U Local	1.838	0.844	0.844	0.844	0.844	**0.844**	0.844	0.844	0.844	0.844	0.844	0.844	0.844	0.844
Total		6.867	7.012	7.043	7.028	**7.046**	6.929	6.916	6.929	6.918	6.913	6.921	6.917	6.927
Budget		10.91	10.91	10.91	10.91	**10.91**	10.91	10.91	10.91	10.91	10.91	10.91	10.91	10.91
Emissions/Budget		0.629	0.643	0.646	0.644	**0.646**	0.635	0.634	0.635	0.634	0.634	0.634	0.634	0.635

Vanderburgh County
CO Emissions

	2025 LRP Emissions Factor (g/mi)	2025 LRP Emission (tons/day)	Alt 1 Emission (tons/day)	Alt 2a Emission (tons/day)	Alt 2b Emission (tons/day)	**Alt 2c Emission (tons/day)**	Alt 3a Emission (tons/day)	Alt 3b Emission (tons/day)	Alt 3c Emission (tons/day)	Alt 4a Emission (tons/day)	Alt 4b Emission (tons/day)	Alt 4c Emission (tons/day)	Alt 5a Emission (tons/day)	Alt 5b Emission (tons/day)
1 R Interstate	9.725	4.258	4.947	4.945	4.962	**4.972**	5.234	5.262	5.198	5.165	5.205	5.208	5.100	5.094
2 R Prin Arterial	6.937	1.042	1.306	1.309	1.316	**1.328**	0.799	0.800	0.808	0.780	0.784	0.788	0.824	0.826
6 R Minor Arterial	7.518	0.864	0.838	0.841	0.841	**0.840**	0.940	0.942	0.939	0.943	0.943	0.942	0.936	0.934
7 R Major Collector	7.858	2.444	2.461	2.469	2.470	**2.472**	2.474	2.481	2.473	2.475	2.477	2.475	2.475	2.474
8 R Minor Collector	8.623	0.176	0.171	0.174	0.175	**0.175**	0.183	0.183	0.183	0.182	0.182	0.182	0.182	0.182
9 R Local	10.108	0.436	0.436	0.436	0.436	**0.436**	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.436
11 U Interstate	8.047	2.940	3.337	3.346	3.357	**3.365**	3.750	3.758	3.733	3.733	3.738	3.743	3.694	3.691
12 U Free/Expways	8.200	9.473	9.663	9.683	9.700	**9.708**	9.368	9.374	9.374	9.343	9.351	9.351	9.376	9.371
14 U Prin Arterial	8.200	5.873	5.981	5.994	6.003	**6.006**	5.824	5.826	5.824	5.815	5.811	5.814	5.824	5.823
16 U Minor Arterial	10.254	13.806	13.817	13.971	13.814	**13.909**	13.707	13.579	13.712	13.720	13.666	13.716	13.659	13.747
17 U Collector	11.649	4.894	4.919	4.926	4.927	**4.929**	4.962	4.968	4.957	4.939	4.939	4.940	4.945	4.942
19 U Local	15.533	7.128	7.128	7.128	7.128	**7.128**	7.128	7.128	7.128	7.128	7.128	7.128	7.128	7.128
Total		53.334	55.003	55.222	55.127	**55.268**	54.806	54.736	54.766	54.658	54.661	54.722	54.579	54.648
Budget		77.94	77.94	77.94	77.94	**77.94**	77.94	77.94	77.94	77.94	77.94	77.94	77.94	77.94
Emissions/Budget		0.684	0.706	0.709	0.707	**0.709**	0.703	0.702	0.703	0.701	0.701	0.702	0.700	0.701

Vanderburgh County
NOX Emissions

	2025 LRP Emissions Factor (g/mi)	2025 LRP Emission (tons/day)	Alt 1 Emission (tons/day)	Alt 2a Emission (tons/day)	Alt 2b Emission (tons/day)	**Alt 2c Emission (tons/day)**	Alt 3a Emission (tons/day)	Alt 3b Emission (tons/day)	Alt 3c Emission (tons/day)	Alt 4a Emission (tons/day)	Alt 4b Emission (tons/day)	Alt 4c Emission (tons/day)	Alt 5a Emission (tons/day)	Alt 5b Emission (tons/day)
1 R Interstate	2.183	0.956	1.110	1.110	1.114	**1.116**	1.175	1.181	1.167	1.159	1.168	1.169	1.145	1.143
2 R Prin Arterial	1.519	0.228	0.286	0.287	0.288	**0.291**	0.175	0.175	0.177	0.171	0.172	0.173	0.181	0.181
6 R Minor Arterial	1.413	0.162	0.157	0.158	0.158	**0.158**	0.177	0.177	0.177	0.177	0.177	0.177	0.176	0.176
7 R Major Collector	1.397	0.434	0.438	0.439	0.439	**0.439**	0.440	0.441	0.440	0.440	0.440	0.440	0.440	0.440
8 R Minor Collector	1.372	0.028	0.027	0.028	0.028	**0.028**	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
9 R Local	1.345	0.058	0.058	0.058	0.058	**0.058**	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
11 U Interstate	1.977	0.722	0.820	0.822	0.825	**0.827**	0.921	0.923	0.917	0.917	0.918	0.919	0.907	0.907
12 U Free/Expways	1.385	1.600	1.632	1.635	1.638	**1.640**	1.582	1.583	1.583	1.578	1.579	1.579	1.584	1.583
14 U Prin Arterial	1.385	0.992	1.010	1.012	1.014	**1.014**	0.984	0.984	0.984	0.982	0.982	0.982	0.984	0.983
16 U Minor Arterial	1.343	1.808	1.810	1.830	1.809	**1.822**	1.795	1.778	1.796	1.797	1.790	1.796	1.789	1.800
17 U Collector	1.333	0.560	0.563	0.564	0.564	**0.564**	0.568	0.568	0.567	0.565	0.565	0.565	0.566	0.565
19 U Local	1.330	0.610	0.610	0.610	0.610	**0.610**	0.610	0.610	0.610	0.610	0.610	0.610	0.610	0.610
Total		8.159	8.521	8.553	8.545	**8.567**	8.514	8.509	8.504	8.484	8.489	8.498	8.468	8.476
Budget		11.56	11.56	11.56	11.56	**11.56**	11.56	11.56	11.56	11.56	11.56	11.56	11.56	11.56
Emissions/Budget		0.706	0.737	0.740	0.739	**0.741**	0.736	0.736	0.736	0.734	0.734	0.735	0.733	0.733